PATENT
TS5594 (US)
CML:EM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re application of	)	
	)	
NICHOLAS J. ADAMS and	)	
GILBERT R. B. GERMAINE	)	Confirmation No.: 4611
	)	
Serial No. 10/583,790	)	Group Art Unit: 1797
	)	
Filed June 21, 2006	)	Examiner: Brian A. McCaig
	)	
PROCESS TO PREPARE A HAZE FREE BASE OIL	)	September 21, 2009
	)	

COMMISSIONER FOR PATENTS
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF

Applicants hereby submit this appeal brief in order to appeal the final rejection of claims 1-24 in the Office Action mailed March 19, 2009. Please charge any fees in connection with the filing of this brief to Shell Oil Company Deposit Account No. 19-1800.

Real Party in Interest

The real party in interest is Shell Oil Company.

Related Appeals and Interferences

To the best of the undersigned's knowledge, there are no related appeals or interferences.

Status of Claims

Claims 1-24 are currently pending in the application. These claims were finally rejected on March 19, 2009 and are on appeal.

Status of Amendments

No amendments to the claims have been filed.

Summary of Claimed Subject Matter

The application currently contains two independent claims. The invention as set forth in claim 1 is directed to a process to prepare a haze free base oil having a cloud point of below 0°C and a kinematic viscosity at 100°C of greater than 10 cSt. See specification page 12, lines 16-27. The process involves four steps. In the first step, a Fischer-Tropsch synthesis product is hydroisomerized. See specification page 3, line 29 to page 5, line 26. In the second step, one or more fuel products and a distillation residue are isolated. See page 5, line 27, to page 6, line 8. The third step involves reducing the wax content of the residue by contacting the feed with a hydroisomerization catalyst under hydroisomerization conditions. See the specification page 6, line 9 to page 10, line 12. In the fourth step, the product of the third step is solvent dewaxed to obtain a haze free base oil. See page 10, line 13, to page 12, line 15 of the specification.

Claim 13 is directed to a process to prepare a lubricant composition not containing a viscosity modifier additive by blending a low viscosity base oil with a haze free base oil having a cloud point of below 0°C and a kinematic viscosity of 100°C of greater than 10 cSt prepared by a four step process. See page 12, line 28 to page 13, line 10 of the specification. The process involves four steps. In the first step, a Fischer-Tropsch synthesis product is hydroisomerized. See page 3, line 29 to page 5, line 26 of the specification. In the second step, one or more fuel products and a distillation residue are isolated. See page 5, line 27 to page 6, line 8 of the specification. The third step involves reducing the wax content of the residue by contacting the feed with a hydroisomerization catalyst under hydroisomerization conditions. See page 6, line 9 to page 10, line 12 of the specification. The fourth step involves solvent dewaxing of the product of the third step to obtain a haze free base oil. See page 10, line 13 to page 12, line 15 of the specification.

Grounds of Rejection to be Reviewed on Appeal

In the Final Office Action, claims 1 and 3 were rejected under 35 U.S.C. 102(b) as being anticipated by Boucher et al. (EP 0471524).

Claims 2-4, 9-10, 12, 14-16, 21-22 and 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher et al. in view of Miller (US Patent 6,699,385) and Sequeira, Lubricant Base Oil and Wax Processing.

Claims 5-7, 11, 17-19 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher et al. in view of Hoek et al. (WO 02/070628).

Claims 8 and 20 were rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Boucher et al.

Argument

Rejection of Claims 1 and 13 under 35 U.S.C. 102(b) over Boucher

The present invention is directed to a process to prepare a haze free base oil having a cloud point of below 0°C and a kinematic viscosity at 100°C of greater than 10 cSt from a Fischer Tropsch synthesis product. In the first step of the process, a Fischer Tropsch synthesis product is hydroisomerized. The effluent from this step is then subjected to distillation to obtain one or more fuel products and a distillation residue. The wax content of the distillation residue is then reduced by contacting it with a hydroisomerization catalyst. The effluent from this step is then subjected to solvent dewaxing to obtain the haze free base oil.

The Boucher et al reference is directed to a method of hydrotreating heavy isomerate fractionator bottoms to produce quality light oil upon subsequent re-fractionation. As illustrated in Fig. 1 of the reference and described on page 7, lines 1-20, a Fischer Tropsch synthesis product is hydrotreated (3) then hydroisomerized (4 & 5), then separated into a fuel fraction, a "heart cut" (9) and a heavy bottoms fraction (3). This residual fraction is sent to a severe hydrotreatment (14) and then recycled to the fractionator or hydroisomerization treatment. Only the heart cut is sent to the solvent dewaxing unit (10).

The process of Boucher et al is quite different from the present invention wherein the bottoms product from the fractionator is hydroisomerized and then solvent dewaxed to obtain the base oil. In Boucher, it is only the "heart cut" that is dewaxed to form the base oil.

Accordingly, Applicants submit that independent claims 1 and 13 are not anticipated by the Boucher et al reference nor would they have been obvious in view of this reference.

Rejection of Claims 2-4, 9-10, 12, 14-16, 21-22 and 24 under 35 U.S.C. 103(a) over Boucher et al. in view of Miller (US Patent 6,699,385) and Sequeira, Lubricant Base Oil and Wax Processing

Inasmuch as all of the claims depend either directly or indirectly from claims 1 and 13, Applicants submit that they are not anticipated nor would they have been obvious for the reasons discussed above with respect to the independent claims.

Rejection of Claims 5-7, 11, 17-19 and 23 under 35 U.S.C. 103(a) over Boucher et al. in view of Hoek et al. (WO 02/070628)

Inasmuch as all of the claims depend either directly or indirectly from claims 1 and 13, Applicants submit that they are not anticipated nor would they have been obvious for the reasons discussed above with respect to the independent claims.

Rejection of Claims 8 and 20 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Boucher et al.

Inasmuch as these claims depend directly from claims 1 and 13, Applicants submit that they are not anticipated nor would they have been obvious for the reasons discussed above with respect to the independent claims.

Conclusion

Based on the foregoing arguments, Applicants assert that that claims of the present application would not have been obvious in view of the cited references. It is respectfully requested that this appeal be upheld and that the application be sent back to the Examiner for allowance.

Respectfully submitted,

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CLAIMS APPENDIX

1. A process to prepare a haze free base oil having a cloud point of below 0 °C and a kinematic viscosity at 100 °C of greater than 10 cSt comprising the following steps:

(a) hydroisomerisation of a Fischer-Tropsch synthesis product;

(b) isolating one or more fuel products and a distillation residue;

(c) reducing the wax content of the residue by contacting the feed with a hydroisomerisation catalyst under hydroisomerisation conditions; and

(d) solvent dewaxing the product of step (c) to obtain a haze free base oil.

2. The process according to claim 1, wherein the distillation residue has a 10 wt% recovery boiling point of above 500 °C and a wax content of greater than 50 wt% and wherein in step (c) the wax content is reduced to a value below 50 wt%.

3. The process according to claim 1, wherein the wax content in step (c) is reduced to below 35 wt%.

4. The process according to claim 3, wherein the wax content in the product of step (c) is between 10 and 35 wt%.

5. The process according to claim 1, wherein the Fischer-Tropsch synthesis product has a weight ratio of compounds having at least 60 or more carbon atoms and compounds having at least 30 carbon atoms in the Fischer-Tropsch product of at least 0.2 and wherein at least 30 wt% of compounds in the Fischer-Tropsch synthesis product have at least 30 carbon atoms.

6. The process according to claim 5, wherein at least 50 wt% of compounds in the Fischer-Tropsch product have at least 30 carbon atoms.

7. The process according to claim 5, wherein the weight ratio of compounds having at least 60 or more carbon atoms and compounds having at least 30 carbon atoms in the Fischer-Tropsch product is at least 0.4.

8. The process according to claim 1, wherein the 10 wt% recovery boiling point of the residue as isolated in step (b) is between 350 and 550 °C.

9. The process according to claim 1, wherein more than 50 wt% of the product of step (c) boils above the 10 wt% recovery point of the residue used as feed in step (c).

10. The process according to claim 9, wherein more than 70 wt% of the product of step (c) boils above the 10 wt% recovery point of the residue used as feed in step (c).

11. The process according to claim 1, wherein the hydroisomerisation catalyst used in step (c) is a substantially amorphous based catalyst comprising a silica-alumina carrier and a noble or non-noble Group VIII metal.

12. The process according to claim 1, wherein the hydroisomerisation catalyst used in step (c) comprises a molecular sieve and a noble or non-noble Group VIII metal.

13. A process to prepare a lubricant composition not containing a viscosity modifier additive by blending a low viscosity base oil with ~~the~~ a haze free base oil having a cloud point of below 0°C and a kinematic viscosity at 100°C of greater than 10 cSt prepared by a process comprising:
(a) hydroisomerisation of a Fischer-Tropsch synthesis product;
(b) isolating one or more fuel products and a distillation residue;
(c) reducing the wax content of the residue by contacting the feed with a hydroisomerisation catalyst under hydroisomerisation conditions; and
(d) solvent dewaxing the product of step (c) to obtain a haze free base oil.

14. The process according to claim 13, wherein the distillation residue has a 10 wt% recovery boiling point of above 500 °C and a wax content of greater than 50 wt% and wherein in step (c) the wax content is reduced to a value below 50 wt%.

15. The process according to claim 13, wherein the wax content in step (c) is reduced to below 35 wt%.

16. The process according to claim 13, wherein the wax content in the product of step (c) is between 10 and 35 wt%.

17. The process according to claim 13, wherein the Fischer-Tropsch synthesis product has a weight ratio of compounds having at least 60 or more carbon atoms and compounds having at least 30 carbon atoms in the Fischer-Tropsch product of at least 0.2 and wherein at least 30 wt% of compounds in the Fischer-Tropsch synthesis product have at least 30 carbon atoms.

18. The process according to claim 13, wherein at least 50 wt% of compounds in the Fischer-Tropsch product have at least 30 carbon atoms.

19. The process according to claim 13, wherein the weight ratio of compounds having at least 60 or more carbon atoms and compounds having at least 30 carbon atoms in the Fischer-Tropsch product is at least 0.4.

20. The process according to claim 13, wherein the 10 wt% recovery boiling point of the residue as isolated in step (b) is between 350 and 550°C.

21. The process according to claim 13, wherein more than 50 wt% of the product of step (c) boils above the 10 wt% recovery point of the residue used as feed in step (c).

22. The process according to claim 13, wherein more than 70 wt% of the product of step (c) boils above the 10 wt% recovery point of the residue used as feed in step (c).

23. The process according to claim 13, wherein the hydroisomerisation catalyst used in step (c) is a substantially amorphous based catalyst comprising a silica-alumina carrier and a noble or non-noble Group VIII metal.

24. The process according to claim 13, wherein the hydroisomerisation catalyst used in step (c) comprises a molecular sieve and a noble or non-noble Group VIII metal.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.